

## INTERNATIONALSEARCHREPORT

International application No.

PCT/JP2004/012865

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> G11B33/12 G11B23/03 G11B25/04

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> G11B33/12 G11B33/02 G11B25/10 G06F1/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 Japanese Utility Model Gazette 1922-1996, Japanese Publication of Unexamined Utility Model Applications 1971-2005, Japanese Registered Utility Model Gazette 1994-2005, Japanese Gazette Containing the Utility Model 1996-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP H07-98619 A(TOSHIBA CORP), 1995.04.11 (Family:NONE)	1-19
A	JP H05-040921 U(CANON, INC.), 1993.06.01 (Family:NONE)	1-19
A	JP H09-114554 A(CANON, INC.), 1997.05.02 (Family:NONE)	1-19
A	JP 2003-173830 A(MITSUMI ELECTRIC CO., LTD), 2003.06.20 (Family:NONE)	1-19

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

03.02.2005

Date of mailing of the international search report

22.2.2005

Name and mailing address of the ISA/JP

Japan Patent Office

3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan

Authorized officer

Hironobu Kinugawa

Telephone No. +81-3-3581-1101 Ext. 3590

5Q

9557

## AMENDED CLAIMS

[received by the International Bureau on 20 April 2005 (20.04.05);  
original claim 15 amended; new claims 20-25 added; remaining claims unchanged]

said holder portion has a guide piece which  
engages with the guide groove.

9. The storage device according to claim 7,  
wherein said engaging portion is a groove intersecting  
5 the guide groove.

10. The storage device according to claim 8,  
wherein said engaging portion is a groove intersecting  
the guide groove.

11. The storage device according to claim 1,  
10 wherein the storage device is an external storage  
device for a computer.

12. The storage device according to claim 4,  
wherein the storage device is an external storage  
device for a computer.

15 13. The storage device according to claim 1,  
wherein the storage device is a storage device  
incorporated in a computer.

14. The storage device according to claim 4,  
wherein the storage device is a storage device  
20 incorporated in a computer.

15.(Amended) A cartridge which is detachably  
loaded in a holder portion in a storage device outside  
a computer or a storage device incorporated in a  
computer and has a storage medium, comprising  
25 a connecting portion being electrically connected  
to said storage device,

an engaging portion which engages with a locking

portion provided to said holder portion to releasably lock said cartridge, and is arranged at a predetermined distance in an inserting/removing direction from an end of said cartridge,

5           the predetermined distance being set common for another cartridge which is detachably loaded in said holder portion and has a length different from that of said cartridge in the inserting/removing direction.

16. A cartridge manufacturing method of  
10   manufacturing a plurality of cartridges which are detachably loaded in a holder portion for a storage device outside a computer or a storage device incorporated in a computer and have a storage media, the cartridges having different lengths in an  
15   inserting/removing direction, comprising

          providing an engaging portion at a predetermined distance in the inserting/removing direction from an end of the cartridge, the engaging portion engaging with a locking portion provided to the holder portion  
20   to releasably lock the cartridge, and

          setting the predetermined distance common among the plurality of types of cartridges.

17. The cartridge manufacturing method according to claim 16, wherein

25           the plurality of types of cartridges include a first cartridge, and a second cartridge which is longer than the first cartridge in the inserting/removing

direction and has first and second engaging portions as the engaging portion,

regarding the first cartridge, the engaging portion is provided at a first distance from one end portion of the first cartridge and at a second distance from the other end of the first cartridge, and

regarding the second cartridge, the first engaging portion is provided at the first distance from one end portion of the second cartridge, and the second engaging portion is provided at the second distance from the other end portion of the second cartridge.

18. A storage device comprising a holder portion in which a cartridge having a storage medium is detachably loaded, said holder portion being capable of being loaded with a plurality of types of cartridges having different lengths in an inserting/removing direction, the cartridges including engaging portions disposed at a predetermined distance in the inserting/removing direction from a trailing end in an inserting direction of the cartridge, wherein

said holder portion includes

a locking portion which is disposed at a predetermined distance in the inserting/removing direction of the cartridge from an insertion port of the cartridge, and engages with the engaging portion to releasably lock the cartridge, and

a positioning member which is provided to be

movable in the inserting/removing direction of the cartridge, and determines a leading end position in an inserting direction of the cartridge.

19. A storage device comprising a holder portion  
5 in which a cartridge having a storage medium is detachably loaded, said holder portion being capable of being loaded with a plurality of types of cartridges having different lengths in an inserting/removing direction, the cartridges including engaging portions  
10 disposed at a predetermined distance in the inserting/removing direction from a leading end in the inserting/removing direction of the cartridge, wherein said holder portion includes  
a positioning member which determines a leading  
15 end position in an inserting direction of the cartridge, and  
a locking portion which is disposed at a predetermined distance in the inserting/removing direction of the cartridge from said positioning member,  
20 and engages with the engaging portion to releasably lock the cartridge.

20.(New) The cartridge according to claim 15, further comprising a guide groove extending in the inserting/removing direction so that the cartridge is  
25 moving stably in the inserting/removing direction.

21.(New) The storage device according to claim 18, further comprising an applying portion applying force

to said cartridge so as to prevent said cartridge from popping out when said cartridge loaded in said holder is unloaded.

22.(New) The storage device according to claim 18,  
5 wherein said holder portion has a electrical connecting portion which is arranged at said positioning member and is electrically connected to said cartridge.

23.(New) The storage device according to claim 18,  
further comprising an elastic member which biases said  
10 positioning member toward an insertion port of said cartridge.

24.(New) A set of cartridges of a first cartridge  
and a second cartridge having different lengths in an  
inserting direction and being inserted into a first  
15 holder portion in a first device and into a second  
holder portion in a second device,

said first cartridge comprising:

a first electrical connecting portion to be  
electrically connected to said first device and said  
20 second device;

a first engaging portion which engages with a  
locking portion provided to said second holder portion  
to releasably lock said first cartridge, said first  
engaging portion being arranged at a first distance  
25 from said electrical connecting portion; and

a second engaging portion which engages with a  
locking portion provided to said first holder portion

to releasably lock said first cartridge, said second engaging portion being arranged at said second distance from the other side of said first electrical connecting portion, and

5       said second cartridge comprising:

      a second electrical connecting portion to be electrically connected to said first device and said second device; and

      a third engaging portion which engages with a  
10   locking portion provided to said first holder portion to releasably lock said second cartridge and to said second holder portion to releasably lock said second cartridge, said third engaging portion being arranged at said first distance from said second electrical  
15   connecting portion and at said second distance from the other side of said second electrical connecting portion.

25.(New) A set of cartridges of a first cartridge and a second cartridge having different lengths in an inserting direction and being inserted into a first  
20   holder portion in a first device and into a second holder portion in a second device,

      said first cartridge comprising:

      a first electrical connecting portion to be electrically connected to said first device and said  
25   second device;

      a first engaging portion which engages with a locking portion provided to said second holder portion

to releasably lock said first cartridge, said first engaging portion being arranged at a first distance from said first electrical connecting portion; and

5 a second engaging portion which engages with a locking portion provided to said first holder portion to releasably lock said first cartridge, said second engaging portion being arranged so that the other side of said first electrical connecting portion is not exposed out of said first holder portion when said  
10 first cartridge is inserted into said first holder portion in a first storage device, and

said second cartridge comprising:

a second electrical connecting portion to be electrically connected to said first device and said  
15 second device; and

a third engaging portion which engages with a locking portion provided to said first holder portion to releasably lock said second cartridge, and to said second holder portion to releasably lock said second  
20 cartridge, said third engaging portion being arranged at said first distance from said second electrical connecting portion and being arranged so that that the other side of said second electrical connecting portion is not exposed out of said first holder portion when  
25 said second cartridge is inserted into said first holder portion.